**MS in Applied Data Science - Portfolio**

**Name:** Sukhad Dnyanesh Joshi

* **Course: IST 687 - Introduction to Data Science**

Predictive Energy Modeling: -

**Project Overview:**

This project focuses on predicting daily energy consumption using Multiple Linear Regression and Principal Component Analysis (PCA) for feature selection. A Shiny web application was developed to allow users to interactively explore energy predictions. The project also examines how different building characteristics, such as square footage and environmental conditions, influence total energy use. The combination of statistical modeling and real-time interactive tools bridges the gap between data science models and practical, user-friendly applications.

**Files in This Folder:**

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| **File** | **Description** |
| Final\_Project.Rmd | R Script for data analysis and modeling |
| Final.csv | Dataset containing energy usage and building features |
| ShinyApp | Shiny application code for interactive energy usage prediction |
| README.docx (IST 687\_Walkthrough) | Project documentation (this file) |

**GitHub Repository:**

<https://github.com/SukhadJoshi/MS-ADS-Portfolio_Sukhad-Dnyanesh-Joshi>

**Software Requirements:**

* R 4.2.0 or later
* RStudio
* Libraries: ggplot2, shiny, dplyr, caret

**How to Review:**

1. Open Energy\_Prediction\_Model.R in RStudio.
2. Run the Shiny app by navigating to the ShinyApp folder and executing app.R.
3. Explore how different variables affect energy usage predictions through the app interface.